

TELETYPE

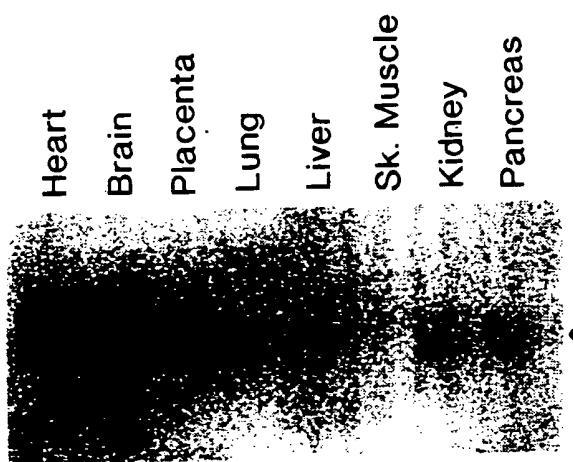


FIG. 1A

FIG. 1B-1

TGG AAC TTC CTG GAA TCC TTT TAT TTT TGT TTT ATT TCC CTG AGC ACC ATT GGC CTG	684
W N F L E S F Y F C F I S L S T I G L	228
GGG GAT TAT GTG CCT GGG GAA GGC TAC AAT CAA AAA TTC AGA GAG CTC TAT AAG ATT	741
G D Y V P G E G Y N Q K F R E L Y K I	247
GGG ATC ACG TGT TAC CTG CTA CTT GGC CTT ATT GCC ATG TTG GTA GTT CTG GAA ACC	798
G I T C Y L L L G L I A M L V V L E T	266
TTC TGT GAA CTC CAT GAG CTG AAA AAA TTC AGA AAA ATG TTC TAT GTG AAG AAG GAC	855
F C E L H E L K K F R K M F Y V K K D	285
AAG GAC GAG GAT CAG GTG CAC ATC ATA GAG CAT GAC CAA CTG TCC TTC TCC TCG ATC	912
K D E D Q V H I I E H D Q L S F S S I	304
ACA GAC CAG GCA GCT GGC ATG AAA GAG GAC CAG AAG CAA AAT GAG CCT TTT GTG GCC	969
T D Q A A G M K E D Q K Q N E P F V A	323
ACC CAG TCA TCT GCC TGC GTG GAT GGC CCT GCA AAC CAT TGA gcgttaggattttttgcatt	1030
T Q S S A C V D G P A N H *	337
atgctagagcaccagggtcagggtcaaggaagaggcttaagtatgttcattttatcagaatgcaaaagcgaaaa	1106
ttatgtcacttaagaaatagctactgtttcaatgtcttattaaaaaacaacaaaaagacacatgaaacaaag	1182
aagctgtgaccccagcaggatgtctaatatgtgagaaatgagatgtccacctaaattcatatgtgacaaaatta	1258
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ggaaactttgggtttgcatttagatcattttagctgtatggctaaatagcaaaatttatattagaagcaaaaaaa	1410
aaagcatagagatgtgtttataataggtttatgttactgtgtttcatgtacccacccaaaatgatttttg	1486
gagaatctaagtcaaactactattataatgtcataggtaccattactatgtacatataaagtataaatgtt	1562
tatattctgtacatatgttttaggtaccagatcttagtgttagttctgaaactaagactatagatattttttct	1638
tttgattctctttataactaaagaatccagagtgtacaataaaataagggaataataaaaaaaaaaaaaaa	1712

FIG. 1B-2

09939483 - 000401

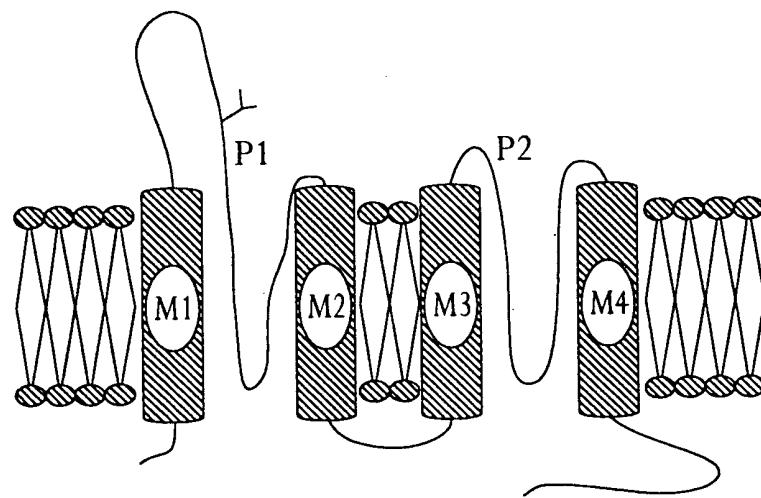
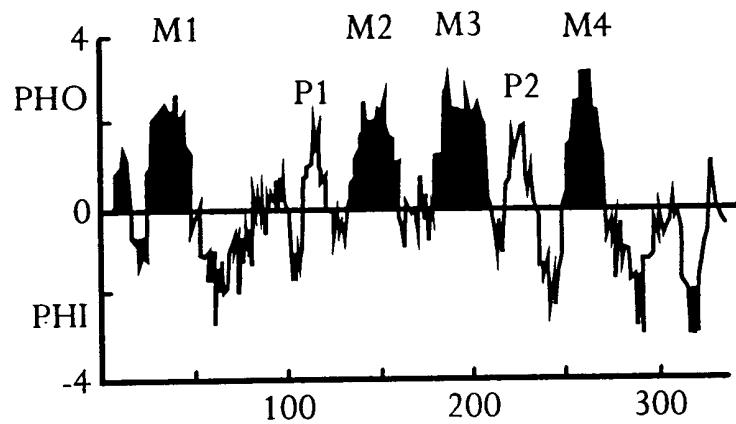


FIG. 1C

TWIK-1 P1
TWIK-1 P2
TOK1 P2
TOK1 P1
Slo
Shaker
Shab
Shal
Shaw
KAT1
AKT1
eag
ROMK1
IRK1
GIRK1

1 14 27

ETSALEFASTVLTSTTGYGHTYPLSDGG
LESFYFCFISLTTGICSDYVPGEGYN
YFNCIYFCFICLLTIGYGDYAPRTGAS
YGNALYECTVSLLTVGGLGDTLPKSVGA
YWTCVYFLIVTMSTVGYGDVYCEIVLG
IPDAFWWAMVTMTTVGYGDMTPVGFWG
IPEAFWWAGITMTTVGYGDTCPITALG
IPAAFWYTIIVTMTTGYGDMVPETTAG
IPLGLWWALVTMTTVGYGDMAPKTYIG
YVTALYWSITTLTTGYGDFHAENPRE
YVTSMYWSITTLTTVGYGDTHPVNTKE
YVTALYFTMTCMTSVGEGNVAAEVDNE
MTSAFLESLETQVTTGYGFRFVTEQCA
FTAASFLESIETOTTTGYGFRCVTDEC
EPSAFLFEEIETEATIGYGYRYITDKCP

FIG. 2A

TWIK-1	1	MLOSLAGSSC V REVE-----RHRSAWCF--GE-----INVLY
f17c8	1	MYTDEGEYSGDTDHG S T I MOKMSPNTRONFRQNVNVV C ISAAATL-----
M110-2	1	MTVSMEENSK I OMESATS I KDKK V ATDRS I LLNK V HLGPLAHTG V LSC-----
TWIK-1	31	L I YL V FGAVV F SSV I ELPY E DLIR D E-----LRK L KRR F EE E HEC---L-----Y A ET T NSSES-----
f17c8	47	LV E N N L I GAG E F-----
M110-2	49	V T Y A LG G AY I FL S IEHP-----EELKR R EKAIRE F QD D I K OQFMGNITS G IEN-----
TWIK-1	71	SEQ D LE E EL G RV L -----E A SN Y GV S V I LS N ASGN W -----DFT S ALF-----
f17c8	69	LN E NSE V -----SK C L H N L P I G G K I TA E M K SK L G K CL T K S R I D G E F K A -----
M110-2	96	SEQ S E E E Y TK K -----L M LED A H A F E Y F FL N HE I PK D M W -----T F <u>S</u> S ALV-----
P1		
TWIK-1	110	FAST V EST T GY G H T V P E S D G GG K A F C T -----Y S V E G I P F T L E T AV V OR I -----
f17c8	115	FSW T LY S T V GY G S E -----P H SP T LG R Y L T I F-----Y S LL M I P V F -----A F K F E F G T -----
M110-2	142	FT T TT T V I P V GY G Y I -----P P V S A Y GR-----M C L T A Y AL L G I -----P L T I V T M A D T G K FA-----
TWIK-1	157	TV H -----V T RRP V L-----Y E HT R W G E S K O V V AL V H A V I L G E T TV S CF-----
f17c8	162	AH F L V V V V S N R T L A V K K AY K IS-----Q N P E A T PS N S L Q H D Y -----FL S -----
M110-2	189	A O L-----V T R-----W I -----F G D D N N M A I P A A -----F I V-----C L -----
P2		
TWIK-1	197	F I -----P A A V F S -----V L -----E D D W N E L E S F Y M C F I S E S T I T G I G D Y -----V P G E G Y -----
f17c8	209	L E C S E S I L S S A F S S T I N S I Y -----L S S V Y F G I -----T T M F L I G G D Y -----V P T N -----
M110-2	213	F A Y P -----V I W G F-----V L C S T S N I T Y -----L D S V Y F S L T-----S I F T I G F D I T P-----
TWIK-1	239	Q K F R E I -----Y K I G E T C Y L E G L G I A M E V -----W V I E T F C-----E L H E L K K R -----
f17c8	254	-----E W W F SG Y C M L F -----L S D V I S N O E Y -----F C Q A R V R Y -----F F H Y -----I A R K -----I L -----
M110-2	253	-----D M N V I H M V L E -----L A V G V I -----V T I E L D I V A-----A E M I -----D R V H Y M G R H V G-----
TWIK-1	278	-----K M F Y -----V K K D K D E O D V -----W H I E H D O-----S E S S I T D O A G M K E-----
f17c8	295	L L R E -----E D D G F O E L T T V S L O H E P I I N S Q C M P S I-----V D D C E K E I L D N D -----
M110-2	294	K A K E LA G K M F O L A Q S I N M K O G L V -----S G V G O L H A L A R F G M I V G R E V D K -----Q T -----
TWIK-1	315	Q K Q N E P F V A T -----
f17c8	338	E K L I S S L E F-----
M110-2	342	E D G T I I A F S P D V M D G L E F M D T I S I Y S R R S R S A E N S A R N L F L S -----

FIG. 2B

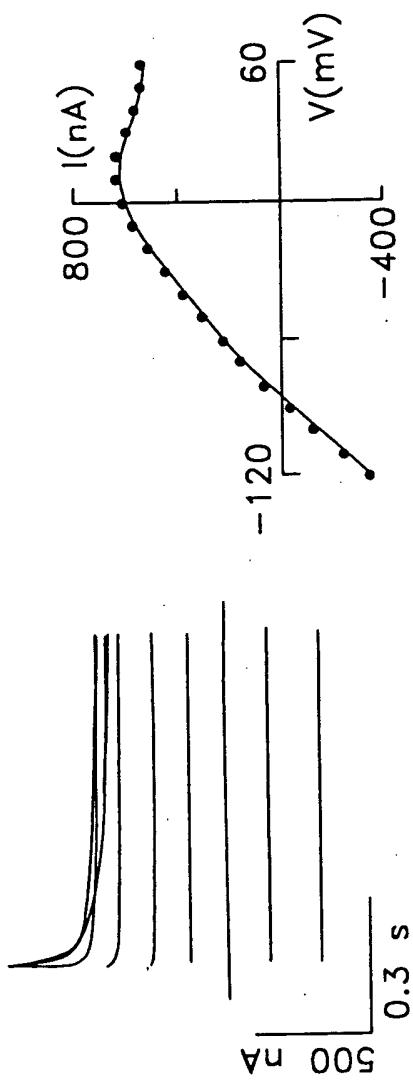


FIG. 3A

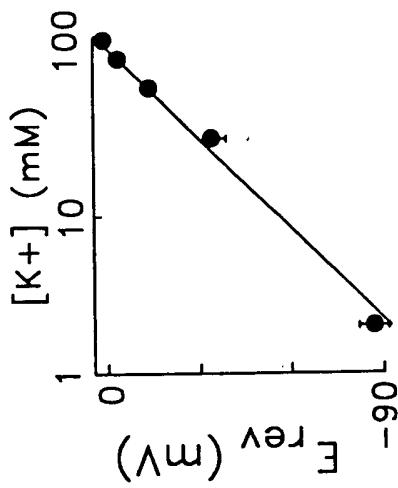


FIG. 3B

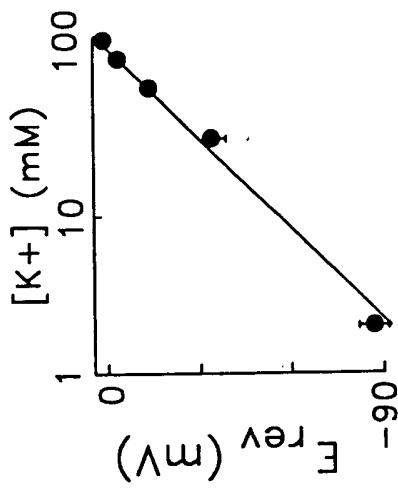


FIG. 3C

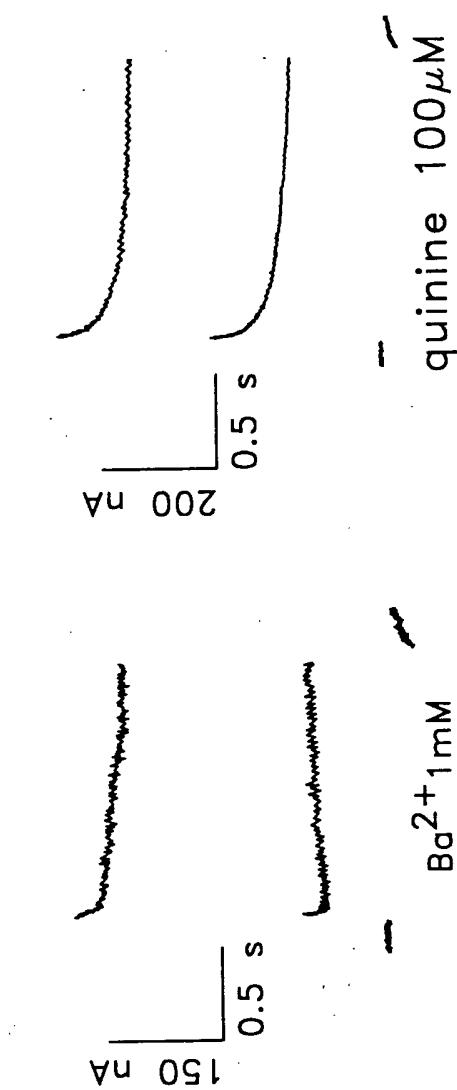


FIG. 3D

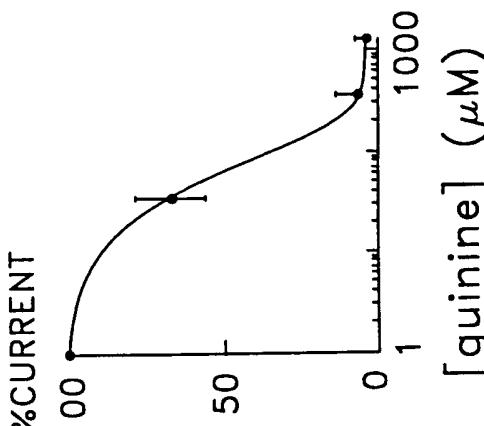


FIG. 3E

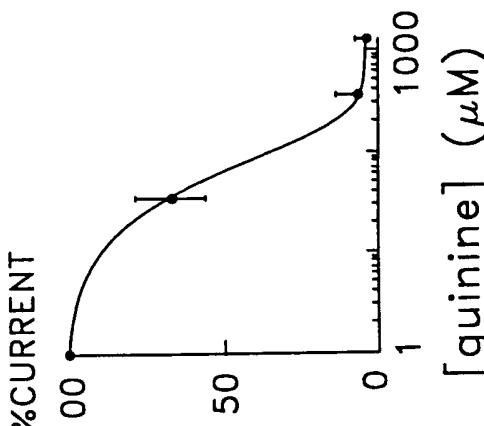


FIG. 3F

FIG. 4A

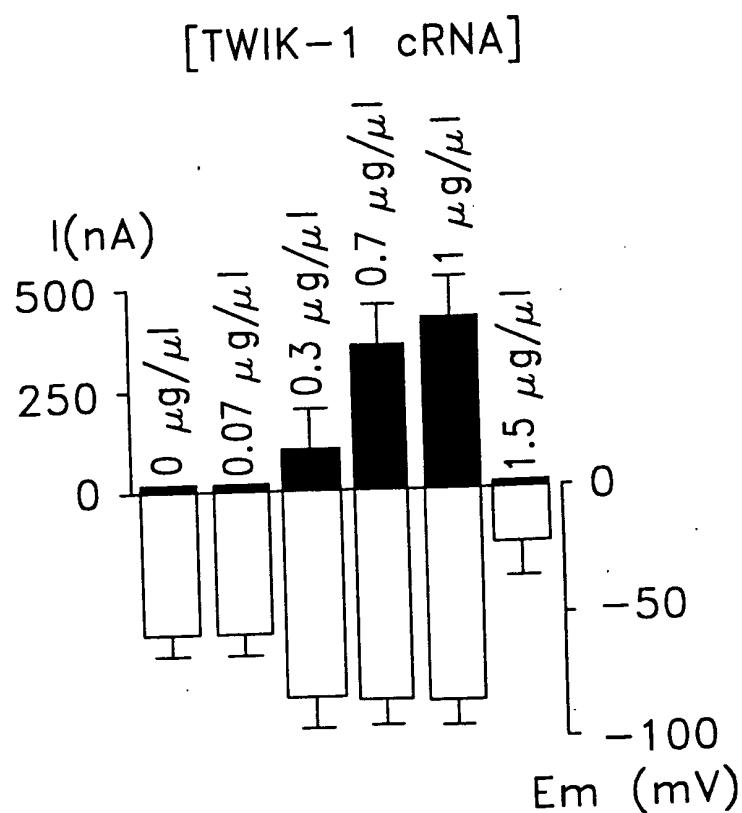


FIG. 4B

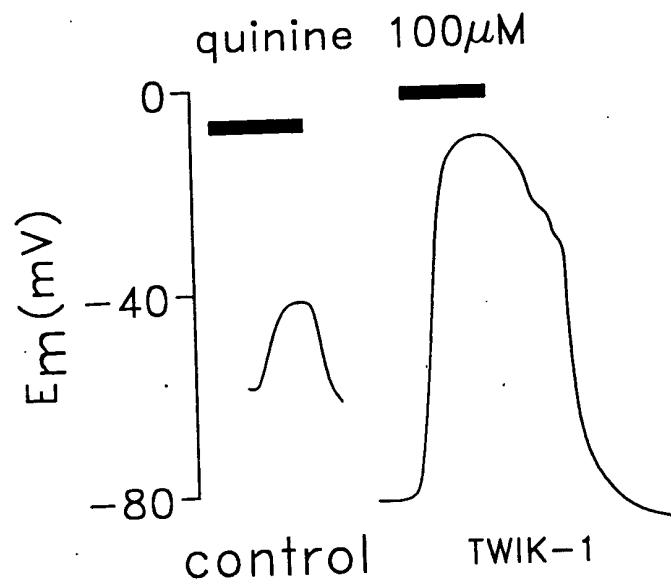
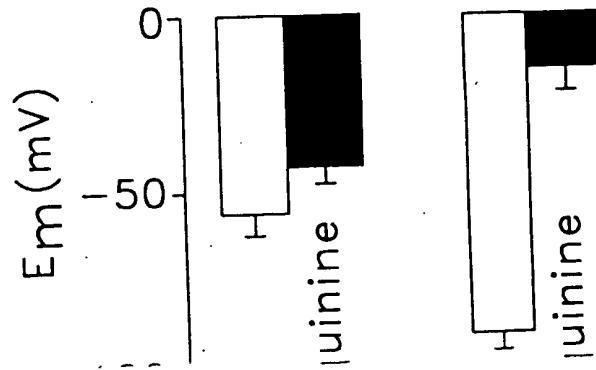


FIG. 4C



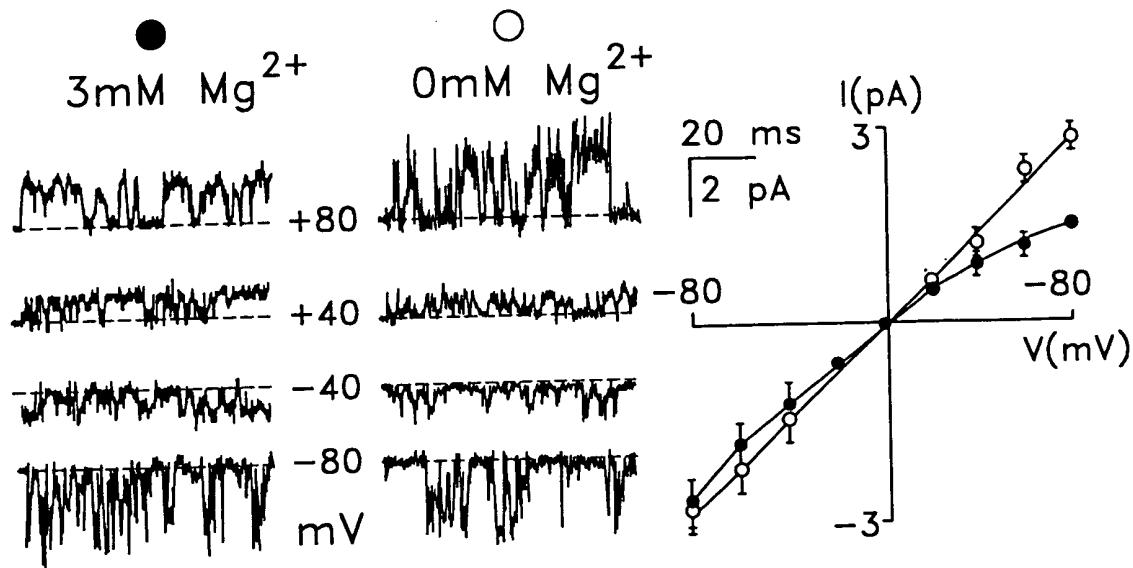


FIG. 5A

FIG. 5B

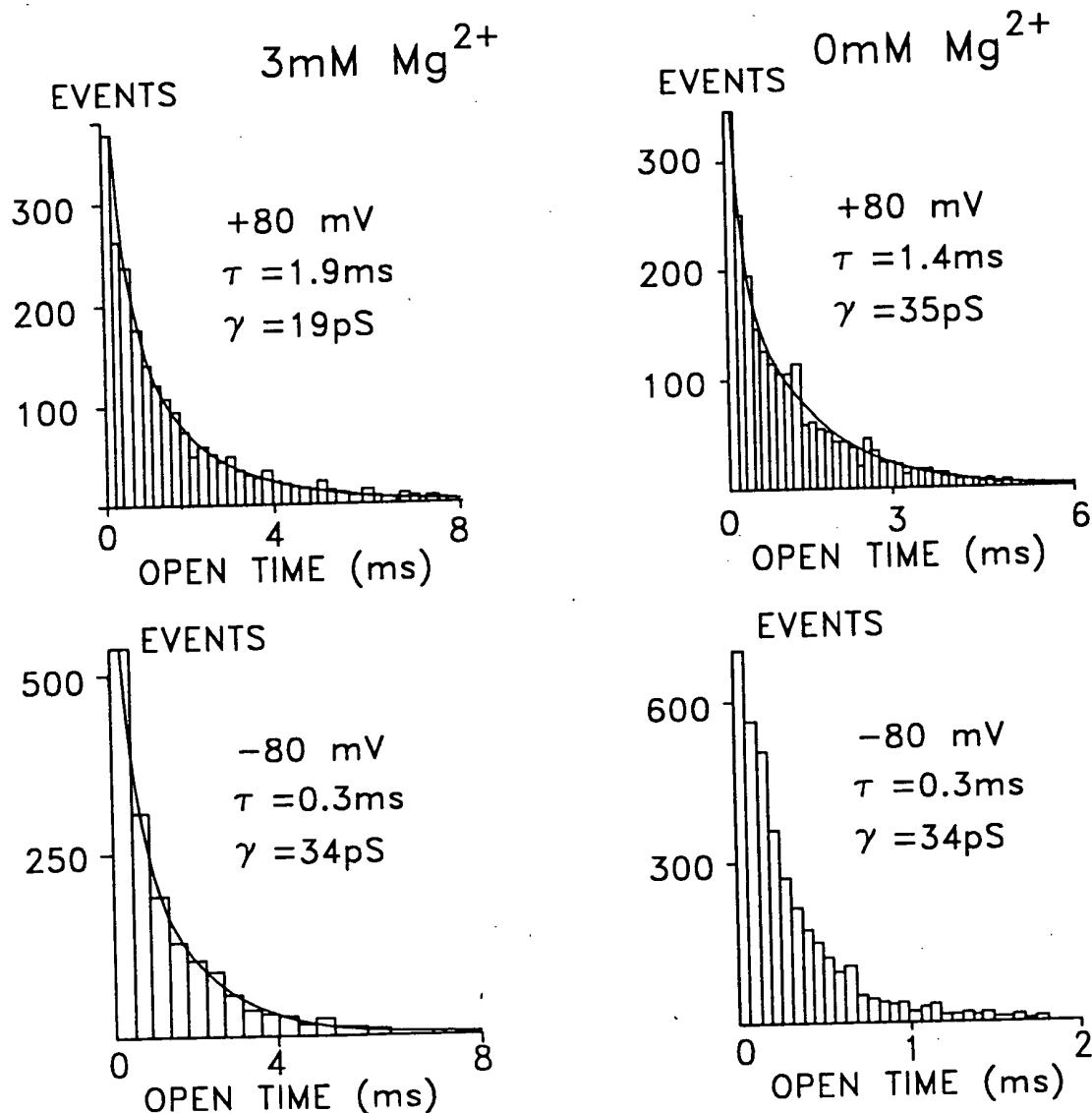


FIG. 5C

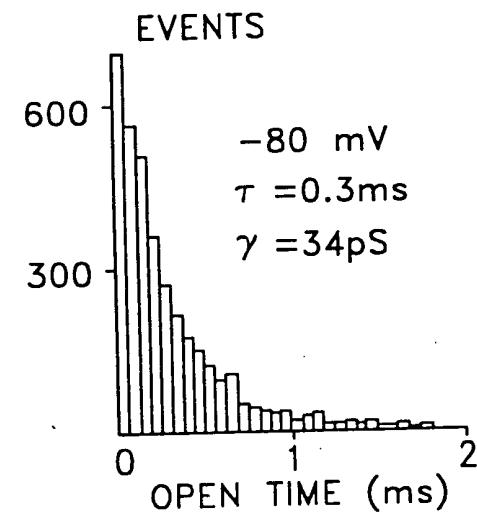


FIG. 5D

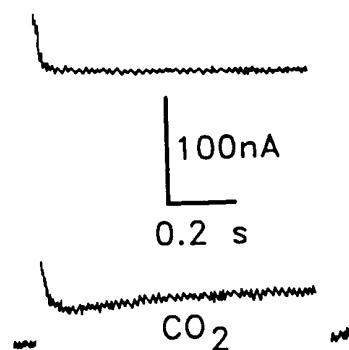


FIG. 6A

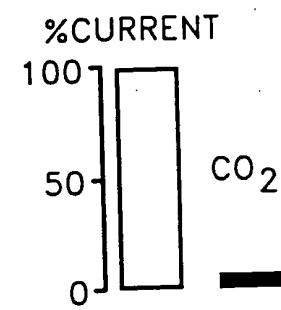


FIG. 6B

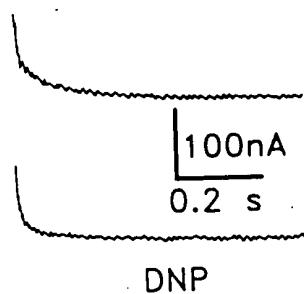


FIG. 6C

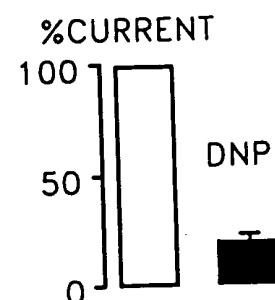


FIG. 6D

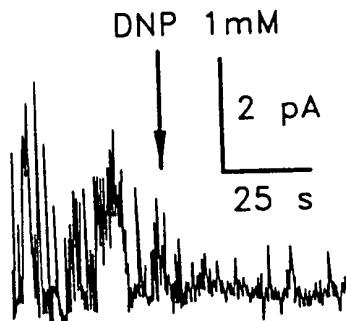


FIG. 6E

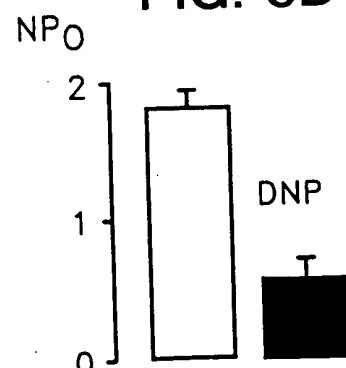


FIG. 6F

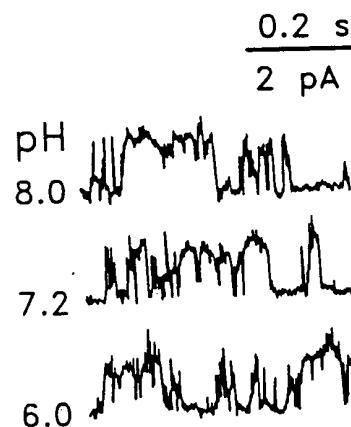


FIG. 6G

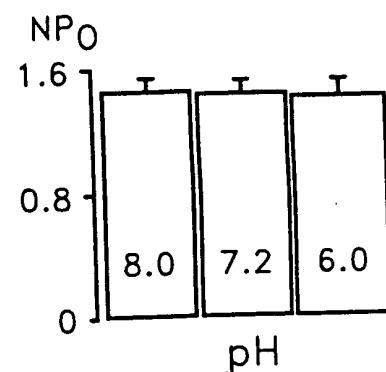


FIG. 6H

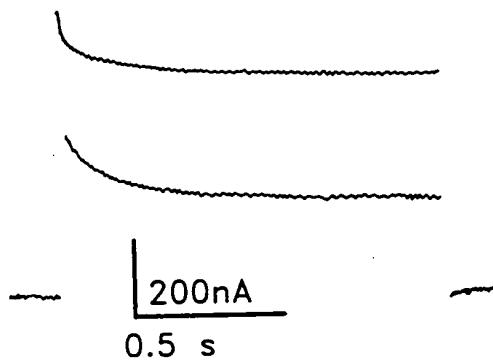


FIG. 7A

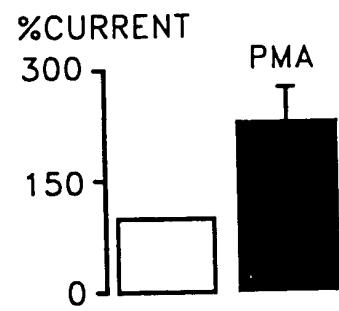


FIG. 7B

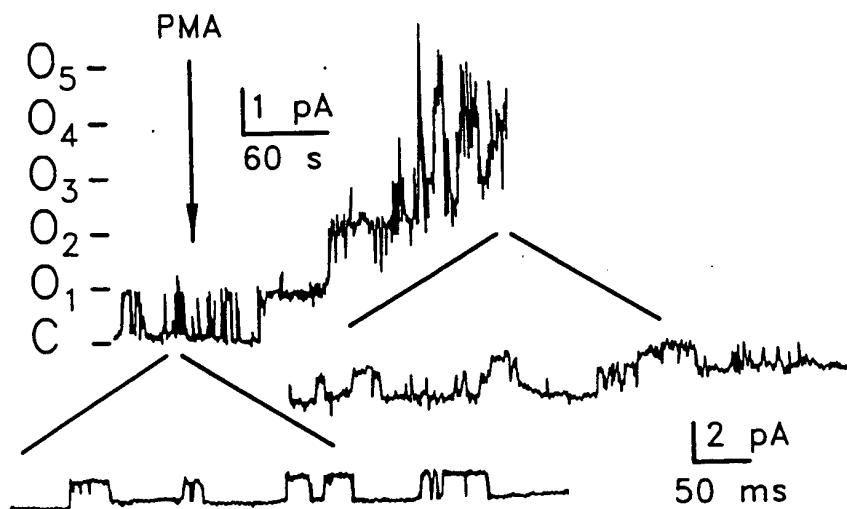


FIG. 7C

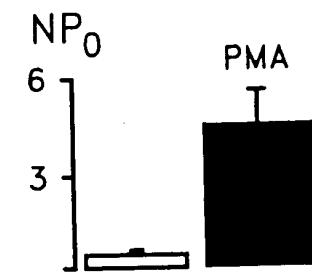


FIG. 7D

tgccctgcgcggatagccgcagccatgccccaggccgcctccg -77
 gggcagcagcagccggccggggccatgcgcggccggggccggccggccggcccggcggacg -1

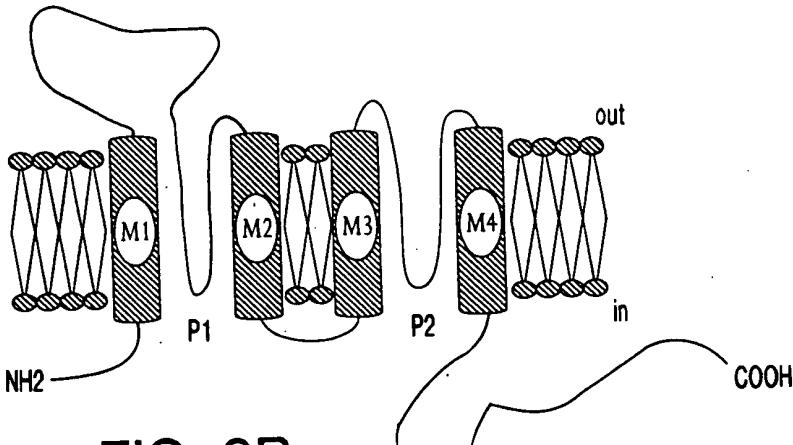
ATG	AAG	CGG	CAG	AAC	GTG	CGC	ACG	CTG	GCG	CTC	ATC	GTG	TGC	ACC	TTC	ACC	TAC	CTG	57	
M	K	R	Q	N	V	R	T	L	A	L	I	V	C	T	F	T	Y	L	19	
L	V	G	A	A	V	F	D	A	L	E	S	E	P	E	L	I	E	R	38	
L	V	G	A	A	V	F	D	A	L	E	S	E	P	E	M	I	E	R		
CAG	CGG	CTG	GAG	CTG	CGG	CAG	CAG	GAG	CTG	CGG	GCG	TAC	AAC	CTC	AGC	CAG	GGC	171		
Q	R	L	E	L	R	Q	Q	E	L	R	A	R	Y	N	L	S	Q	G	57	
Q	R	L	E	L	R	Q	L	E	L	R	A	R	Y	N	L	S	E	G		
														*						
GGC	TAC	GAG	GAG	CTG	GAG	CGC	GTC	GTG	CTG	CGC	CTC	AAG	CCG	CAC	AAG	GCC	GGC	GTG	228	
G	Y	E	E	L	E	R	V	V	L	R	L	K	P	H	K	A	G	V	76	
G	Y	E	E	L	E	R	V	V	L	R	L	K	P	H	K	A	G	V		
CAG	TGG	CGC	TTC	GCC	GGC	TCC	TTC	TAC	TTC	GCC	ATC	ACC	GTC	ATC	ACC	ACC	ATC	GGC	285	
Q	W	R	F	A	G	S	F	Y	F	A	I	T	V	I	T	T	I	G	95	
Q	W	R	F	A	G	S	F	Y	F	A	I	T	V	I	T	T	I	G		
TAC	GGG	CAC	GCG	GCA	CCC	AGC	ACG	GAT	GGC	GGC	AAG	GTG	TTC	TGC	ATG	TTC	TAC	GGC	342	
Y	G	H	A	A	A	P	S	T	D	G	G	K	V	F	C	M	F	Y	A	114
Y	G	H	A	A	A	P	S	T	D	G	G	K	V	F	C	M	F	Y	A	
CTG	CTG	GGC	ATC	CCG	CTC	ACG	CTG	GTC	ATG	TTC	CAG	AGC	CTG	GGC	GAG	CGC	ATC	AAC	399	
L	L	G	I	P	L	T	L	V	M	F	Q	S	L	G	E	R	I	N	133	
L	L	G	I	P	L	T	L	I	M	F	Q	S	L	G	E	R	I	N		
ACC	TTG	GTG	AGG	TAC	CTG	CTG	CAC	CGC	GCC	AAG	AAG	GGG	CTG	GGC	ATG	CGG	CGC	GCC	456	
T	L	V	R	Y	L	L	H	R	A	K	K	G	L	G	M	R	R	A	152	
T	E	V	R	Y	L	L	H	R	A	K	R	G	L	G	M	R	H	A		
GAC	GTG	TCC	ATG	GCC	AAC	ATG	GTG	CTC	ATC	GGC	TTC	TTC	TCG	TGC	ATC	AGC	ACG	CTG	513	
D	V	S	M	A	N	M	V	L	I	G	F	F	S	C	I	S	T	L	171	
E	V	S	M	A	N	M	V	L	I	G	F	V	S	C	I	S	T	L		
TGC	ATC	GGC	GCC	GCC	GCC	TTC	TCC	CAC	TAC	GAG	CAC	TGG	ACC	TTC	TTC	CAG	GCC	TAC	570	
C	I	G	A	A	A	A	F	S	H	Y	E	H	W	T	F	F	Q	A	190	
C	I	G	A	A	A	F	S	X	Y	E	R	W	T	F	F	Q	A	Y		
TAC	TAC	TGC	TTC	ATC	ACC	CTC	ACC	ACC	ATC	GGC	TTC	GGC	GAC	TAC	GTG	GCG	CTG	CAG	627	
Y	Y	C	F	I	T	L	T	T	I	G	F	G	D	Y	V	A	L	Q	209	
Y	Y	C	F	I	T	L	T	T	I	G	F	G	D	Y	V	A	L	Q		
AAG	GAC	CAG	GCC	CTG	CAG	ACG	CAG	CCG	CAG	TAC	GTG	GCC	TTC	AGC	TTC	GTC	TAC	ATC	684	
K	D	Q	A	L	Q	T	Q	P	Q	Y	V	A	F	S	F	V	Y	I	228	
K	D	Q	A	L	Q	T	Q	P	Q	Y	V	A	F	S	F	V	Y	I		
CTT	ACG	GGC	CTC	ACG	GTC	ATC	GGC	GCC	TTC	CTC	AAC	CTC	GTG	GTG	CTG	CGC	TTC	ATG	741	
L	T	G	L	T	V	I	G	A	F	L	N	L	V	V	L	R	F	M	247	
L	T	G	L	T	V	I	G	A	F	L	N	L	V	V	L	R	F	M		

ACC ATG AAC GCC GAG GAC GAG AAG CGC GAC GCC GAG CAC CGC GCG CTG CTC ACG CGC	798
T M N A E D E K R D A E H R A L L T R	266
T M N A E D E K R D A E H R A L L T H	
AAC GGG CAG GCG GGC GGC GGA GGG GGT GGC AGC GCG CAC ACT ACG GAC ACC GCC	855
N G Q A G G G G G S A H T T D T A	285
N G Q A Y G L G G L S C L S G S L G D	
TCA TCC ACG GCG GCA GCG GGC GGC GGC TTC CGC AAC GTC TAC GCG GAG GTG CTG	912
S S T A A A G G G G F R N V Y A E V L	304
<u>VRPRDPV</u> T C A A G <u>GVGVGVGGS</u> G F R N V Y A E V L	
CAC TTC CAG TCC ATG TGC TCG CTG TGG TAC AAG AGC CGC GAG AAG CTG CAG TAC	969
H F Q S M C S C L W Y K S R E K L Q Y	323
H F Q S M C S C L W Y K S R E K L Q Y	
TCC ATC CCC ATG ATC ATC CCG CGG GAC CTC TCC ACG TCC GAC ACG TGC GTG GAG CAG	1026
S I P M I I P R D L S T S D T C V E Q	342
S I P M I I P R D L S T S D T C V E H	
AGC CAC TCG TCG CCG GGA GGG GGC GGC CGC TAC AGC GAC ACG CCC TCG CGA CGC TGC	1083
S H S S P G G G R Y S D T P S R R C	361
S H S S P G G G R Y S D T P S H P C	
CTG TGC AGC GGG GCG CCA CGC TCC GCC ATC AGC TCG GTG TCC ACG GGT CTG CAC AGC	1140
L C S G A P R S A I S S V S T G L H S	380
L C S G T Q R S A I S S V S T G L H S	
CTG TCC ACC TTC CGC GGC CTC ATG AAG CGC AGG AGC TCC GTG TGA ctgccccgagggacc	1200
L S T F R G L M K R R S S V *	395
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FIG. 8B

1	---	ML QSLAGSSCVR	---	LVER HRS	---
1	MAAPD	LDPKSAAQNSK	PRLS FSSKPTV	LASR VES	DSA
1	---	MKR	---	Q - NVR	---
M1					
TWIK-1	20	---	AW C FG - F L V L G Y L L Y L V F G A V V F S S V E L P Y E D L L		
TREK-1	39	IN VMK	N K T V S T I F L V V M L Y L I T G A A V F K A L E Q P Q E I S Q		
TASK	8	---	T I A L I V C T F T Y L L V G A A V F D A L E S E P E L I E		
TWIK-1	53	RO E L R K L K R R F L E E H E C L S E Q Q L E Q F L G R V L E A S N Y G V			
TREK-1	77	R T T I V I Q K O T F I A Q H A C V N S T E L D E L I Q Q I V A A I N A G I			
TASK	38	R O R L E L R Q Q E L R A R Y N L S Q G G - Y E E L E R V V L R L K P H K A			
P1					
TWIK-1	91	S V L S N A S G - N W N N D F T S A L F F A S T V L S T T G Y G H T V P L S			
TREK-1	115	I P L G N S S N Q V S H D L G S S F F A G T V I T T I G E G N I S P R T			
TASK	75	G - - - - - V Q - W R F A G S F Y F A T V I T T I G Y G H A A P S T			
M2					
TWIK-1	128	D G G K A F C I I Y S V I G I P E T L L F L T A V V O R I T V H V T R - - R			
TREK-1	153	E G G K I F C I I Y A L L G I P L E G F L L A C V G D O L G T I F G K G I A			
TASK	104	D G G K V F C M E Y A L L G I P L T L V M F O S L G E R I N T L V R Y - - -			
M3					
TWIK-1	164	P V L Y F H I R N G E S K O V V A I V H A V L I G F V T V S C F E F I P A A			
TREK-1	191	K V E D T F I K V N M S O T K I R I I S T I L I F L G C V I E V A I P A V			
TASK	139	L C H R A K K G I G M R R A D V S M A N M V L I G F F S C I S T L C I G A A			
P2					
TWIK-1	202	V F S V L E D D N N F L E S F Y F C F I S L S T I G I G D Y V P G E - G Y N			
TREK-1	229	I F K H I E G - W S A L D A I Y F V V I T L T T I G F G D Y V A G - - G S D			
TASK	177	A F S H Y E H - W T F F O A Y Y Y C F I T L T T I G F G D Y V A L E O K D Q A			
M4					
TWIK-1	239	Q K E R E L Y K I G I T C Y L L I G L I A M L V V L E T F C E L H E L K K F			
TREK-1	264	I E Y L D F Y K P V V W E W I L V G L A Y F A A V L S M I G D W L R V I S K			
TASK	214	L Q T Q P Q Y V A E S F V Y I L T G L T V I G A F L N L V V L R F M T M N A			
TWIK-1	277	R K M F Y V K K D K D - - - - -			
TREK-1	302	K T K E E V G E F R - - - - -			
TASK	252	E D E K R D A E H R A L L T R N G Q A G G G G G G S A H T T D T A S S T A			
TWIK-1	288	----- E D Q V H I I E H D Q L S F S S I T D Q A A G M K - - -			
TREK-1	312	----- A H A A E W T A N V T A E E K E T R R R L S V E I - - -			
TASK	290	A A G G G G F R N V Y A E V L H F Q S M C S C L W Y K S R E K L Q Y S I P M			
TWIK-1	313	--- E D Q K Q N E P F V A T Q S S A C V D G P A N H - - - - -			
TREK-1	337	--- Y D K F O R A T S V K R K L S A E L A G N H N Q E L T P C M R T C L -			
TASK	328	I I P R D L S T S D T C V E Q S H S S P G G G G R Y S D T P S R R C L C S G			
TWIK-1	337	-----			
TREK-1	371	-----			
TASK	366	A P R S A I S S V S T G L H S L S T F R G L M K R R S S V			

FIG. 9A



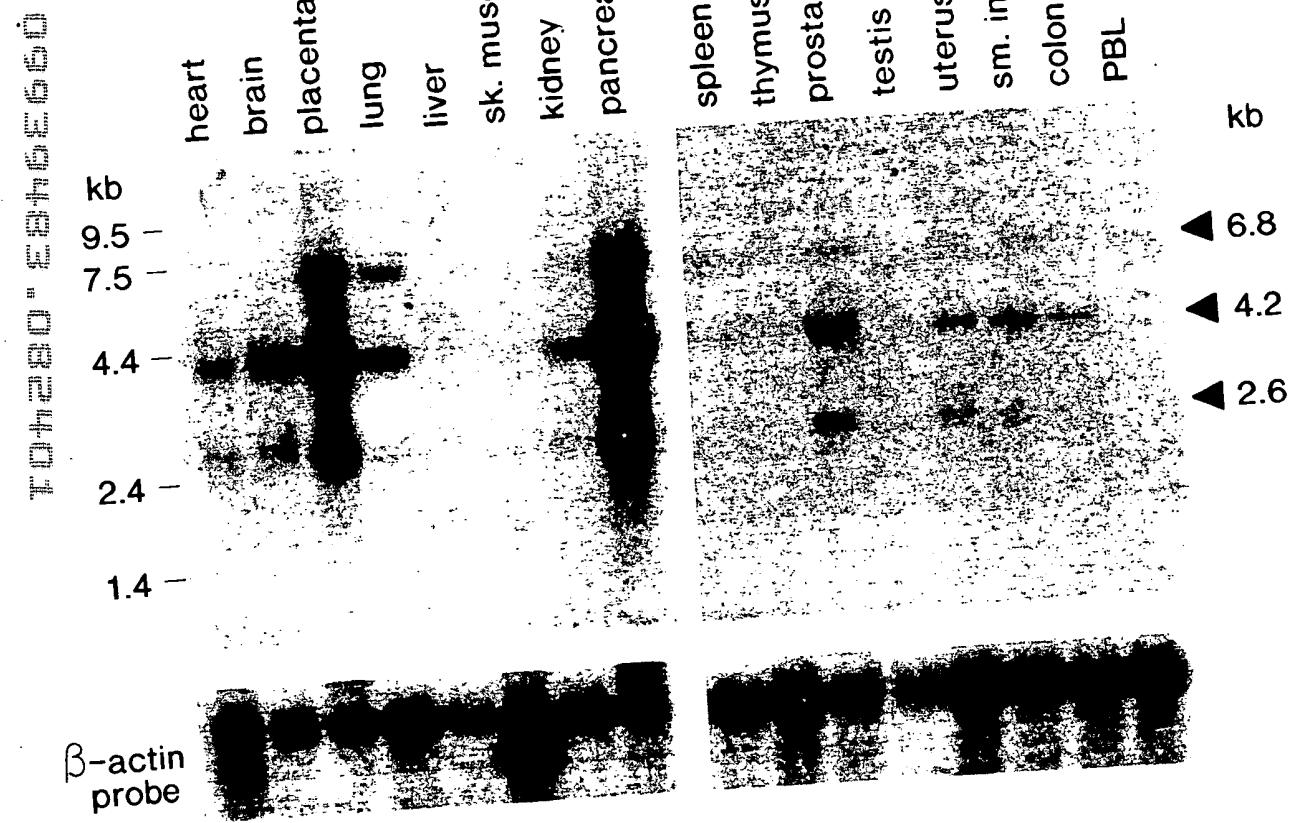


FIG. 10

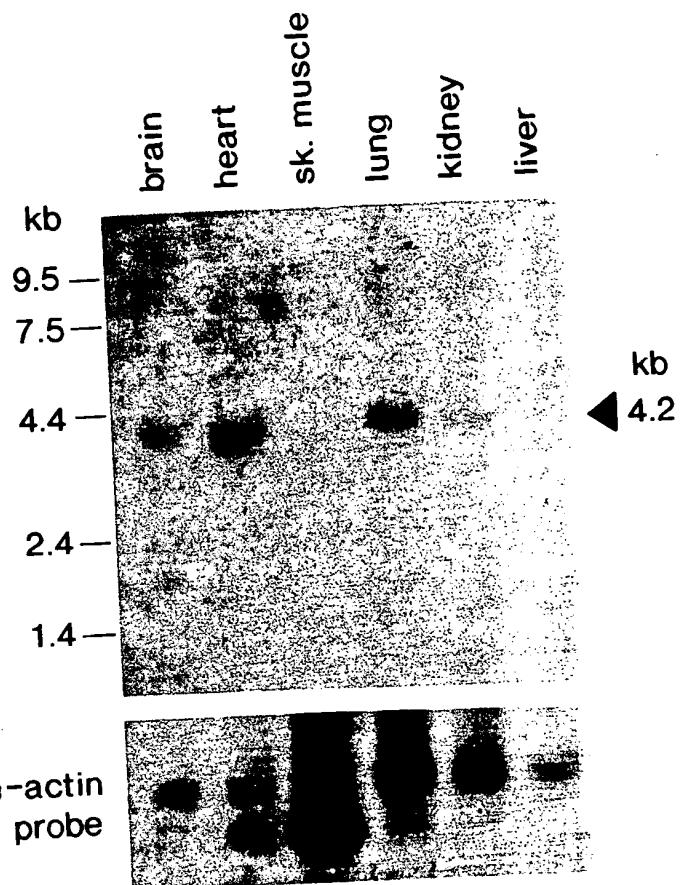


FIG. 11A

FIG. 11B

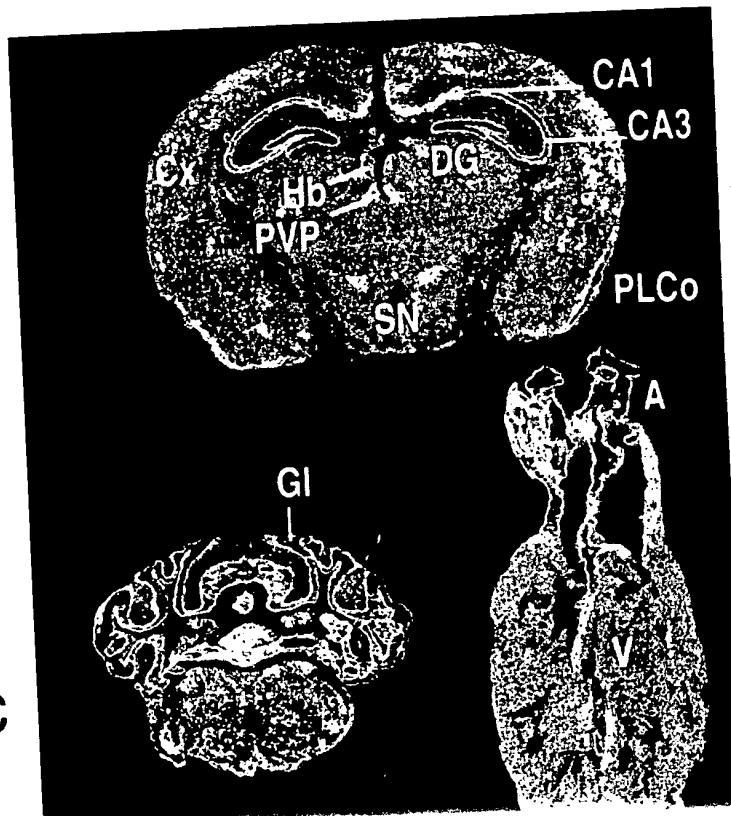


FIG. 11C

FIG. 11D

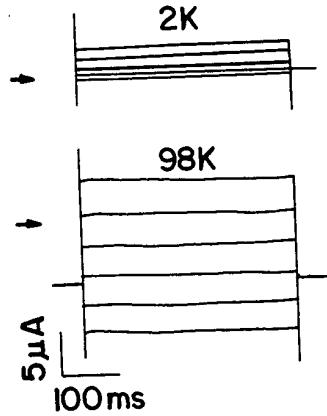


FIG. 12A

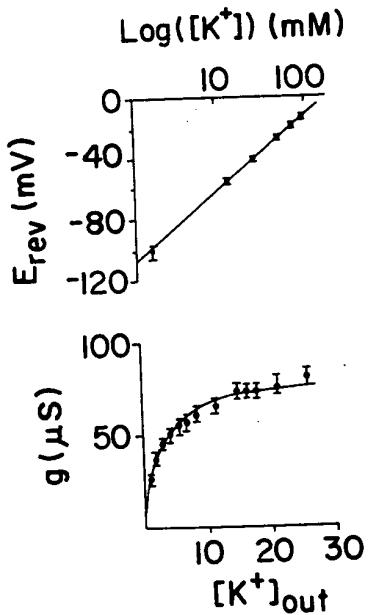


FIG. 12C

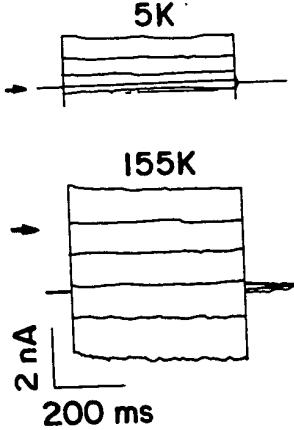


FIG. 12E

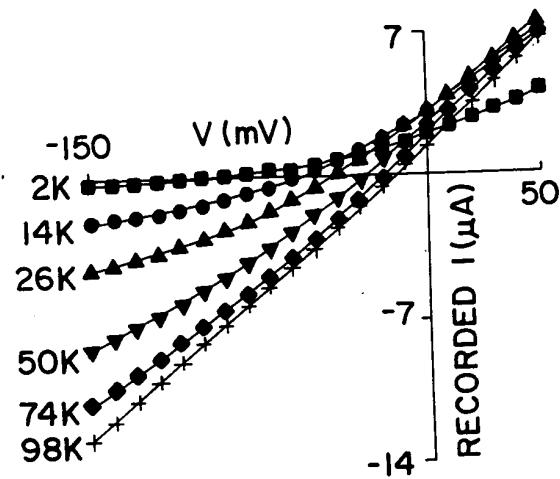


FIG. 12B

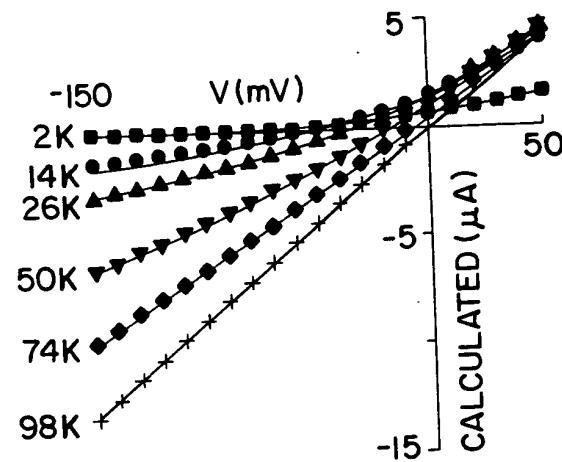


FIG. 12D

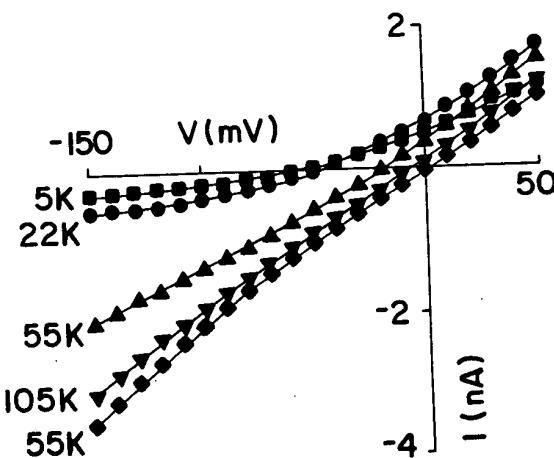


FIG. 12F

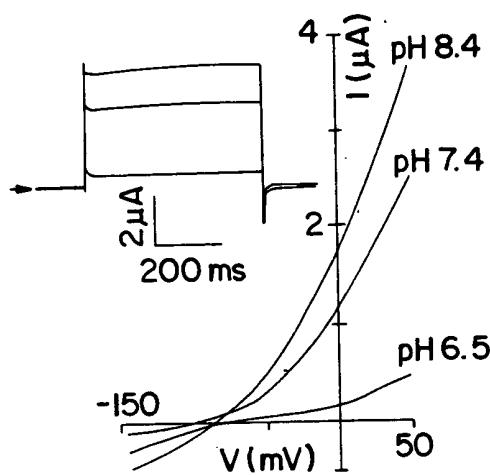


FIG. 13A

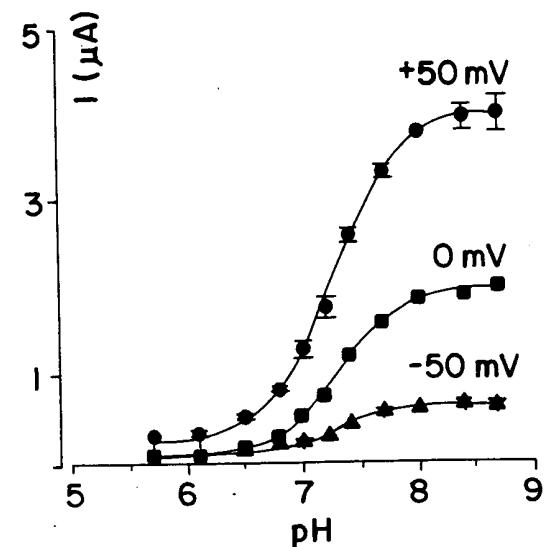


FIG. 13B

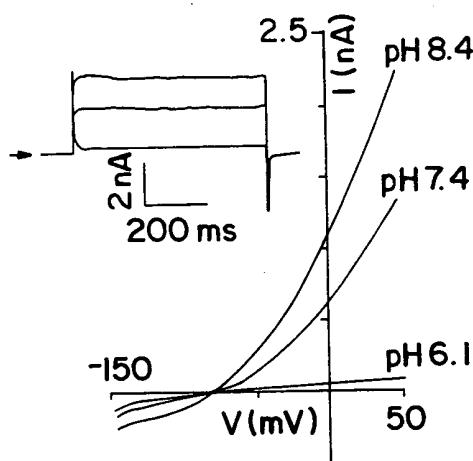


FIG. 13C

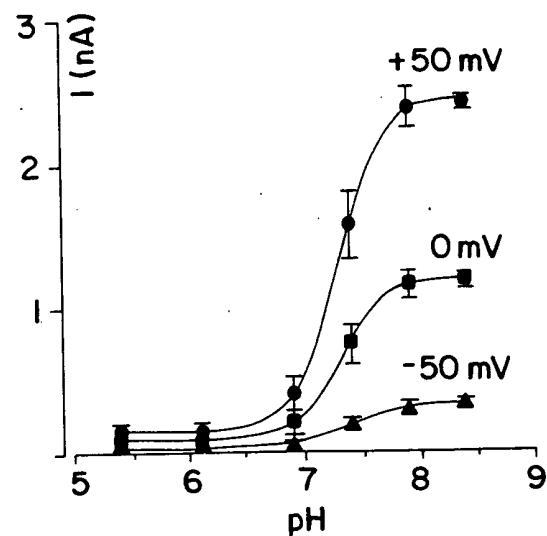


FIG. 13D